



[4910-13-P]

## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2020-0573; Product Identifier 2020-NM-078-AD]**

**RIN 2120-AA64**

**Airworthiness Directives; The Boeing Company Airplanes**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Notice of proposed rulemaking (NPRM).

**SUMMARY:** The FAA proposes to adopt a new airworthiness directive (AD) for all The Boeing Company Model 747-100, 747-100B, 747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D, 747-400F, 747SR, and 747SP series airplanes. This proposed AD was prompted by a determination that the upper wing skin at engine nacelle points may be subject to undetected cracking. This proposed AD would require repetitive ultrasonic inspections of the upper wing skin at certain engine strut positions for cracking; repetitive detailed and ultrasonic inspections of the strut lower spar fitting, diagonal brace strut end clevis, and diagonal brace wing attach end clevis for cracking; repetitive detailed inspections of lower link fitting at certain engine strut positions for cracking; and applicable on-condition actions. The FAA is proposing this AD to address the unsafe condition on these products.

**DATES:** The FAA must receive comments on this proposed AD by [INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** You may send comments, using the procedures found in 14 CFR 11.43 and 11.45, by any of the following methods:

- Federal eRulemaking Portal: Go to <https://www.regulations.gov>. Follow the instructions for submitting comments.
- Fax: 202-493-2251.
- Mail: U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE., Washington, DC 20590.
- Hand Delivery: Deliver to Mail address above between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays.

For service information identified in this NPRM, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195. It is also available on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0573.

### **Examining the AD Docket**

You may examine the AD docket on the Internet at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0573; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this NPRM, any comments received, and other information. The

street address for Docket Operations is listed above. Comments will be available in the AD docket shortly after receipt.

**FOR FURTHER INFORMATION CONTACT:** Eric Lin, Aerospace Engineer,  
Airframe Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA  
98198; phone and fax: 206-231-3523; email: eric.lin@faa.gov.

**SUPPLEMENTARY INFORMATION:**

**Comments Invited**

The FAA invites you to send any written relevant data, views, or arguments about this proposal. Send your comments to an address listed under the ADDRESSES section. Include “Docket No. FAA-2020-0573; Product Identifier 2020-NM-078-AD” at the beginning of your comments. The FAA specifically invites comments on the overall regulatory, economic, environmental, and energy aspects of this NPRM. The FAA will consider all comments received by the closing date and may amend this NPRM because of those comments.

The FAA will post all comments received, without change, to <https://www.regulations.gov>, including any personal information you provide. The FAA will also post a report summarizing each substantive verbal contact received about this proposed AD.

**Discussion**

The FAA has received a report indicating that the upper wing skin at engine nacelle points may be subject to undetected cracking. Safety service related problems found on a Model 757 airplane led to a cross-model review of the upper wing skin at engine nacelle attach points and a revision to analysis criteria. The FAA has not received

any reports of cracking on Model 747 airplanes, but existing inspections do not provide opportunities for crack detection prior to loss of residual strength in the fail-safe load path. Based on the findings for Model 757 airplanes, Boeing identified that loss of clamp-up due to shim migration, cracked fastener heads, or loss of torque causes cracking of the fasteners and fastener holes and may lead to cracking of the upper wing skin. Undetected cracks in the upper wing skin, strut lower spar fitting, or clevis lugs at either end of the diagonal brace and lower link fitting, if not addressed, could adversely affect the structural integrity of the engine strut and may lead to the separation of the strut to wing box assembly.

#### **Related Service Information under 1 CFR Part 51**

The FAA reviewed Boeing Alert Requirements Bulletin 747-57A2363 RB, dated December 23, 2019. The service information describes procedures for ultrasonic inspections of the upper wing skin at engine strut positions 1 through 4 for cracking; detailed and ultrasonic inspections of the strut lower spar fitting, diagonal brace strut end clevis, and diagonal brace wing attach end clevis for cracking; detail inspections of lower link fitting at engine strut positions 1 through 4 for cracking; and applicable on-condition actions. On-condition actions include repair.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

## **FAA's Determination**

The FAA is proposing this AD because the agency evaluated all the relevant information and determined the unsafe condition described previously is likely to exist or develop in other products of the same type design.

## **Proposed AD Requirements**

This proposed AD would require accomplishment of the actions identified in Boeing Alert Requirements Bulletin 747-57A2363 RB, Original issue, dated December 23, 2019, described previously, except for any differences identified as exceptions in the regulatory text of this proposed AD.

For information on the procedures and compliance times, see this service information at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-0573.

## **Explanation of Requirements Bulletin**

The FAA worked in conjunction with industry, under the Airworthiness Directive Implementation Aviation Rulemaking Committee (AD ARC), to enhance the AD system. One enhancement is a process for annotating which steps in the service information are “required for compliance” (RC) with an AD. Boeing has implemented this RC concept into Boeing service bulletins.

In an effort to further improve the quality of ADs and AD-related Boeing service information, a joint process improvement initiative was worked between the FAA and Boeing. The initiative resulted in the development of a new process in which the service information more clearly identifies the actions needed to address the unsafe condition in the “Accomplishment Instructions.” The new process results in a Boeing Requirements

Bulletin, which contains only the actions needed to address the unsafe condition (i.e., only the RC actions).

### **Costs of Compliance**

The FAA estimates that this proposed AD affects 125 airplanes of U.S. registry.

The FAA estimates the following costs to comply with this proposed AD:

#### **Estimated costs for required actions**

| <b>Action</b> | <b>Labor cost</b>   | <b>Parts cost</b> | <b>Cost per product</b>    | <b>Cost on U.S. operators</b> |
|---------------|---|-------------------|----------------------------|-------------------------------|
| Inspections   | 9 work-hours X \$85 per hour = \$765 per inspection cycle | \$0               | \$765 per inspection cycle | \$95,625 per inspection cycle |

The FAA has received no definitive data that would enable the agency to provide cost estimates for the on-condition actions specified in this proposed AD.

### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: "General requirements." Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

## **Regulatory Findings**

The FAA determined that this proposed AD would not have federalism implications under Executive Order 13132. This proposed AD would not have a substantial direct effect on the States, on the relationship between the national Government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify this proposed regulation:

- (1) Is not a “significant regulatory action” under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

## **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

## **The Proposed Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA proposes to amend 14 CFR part 39 as follows:

### **PART 39 - AIRWORTHINESS DIRECTIVES**

- 1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

- 2. The FAA amends § 39.13 by adding the following new airworthiness directive (AD):

**The Boeing Company:** Docket No. FAA-2020-0573; Product Identifier  
2020-NM-078-AD.

**(a) Comments Due Date**

The FAA must receive comments by [INSERT DATE 45 DAYS AFTER DATE  
OF PUBLICATION IN THE Federal Register].

**(b) Affected ADs**

None.

**(c) Applicability**

This AD applies to all The Boeing Company Model 747-100, 747-100B,  
747-100B SUD, 747-200B, 747-200C, 747-200F, 747-300, 747-400, 747-400D,  
747-400F, 747SR, and 747SP series airplanes, certificated in any category.

**(d) Subject**

Air Transport Association (ATA) of America Code 57, Wings.

**(e) Unsafe Condition**

This AD was prompted by a determination that the upper wing skin at engine nacelle attachment points may be subject to undetected cracking. The FAA is issuing this AD to address undetected cracking in the upper wing skin, strut lower spar fitting, or clevis lugs at either end of the diagonal brace and lower link fitting. This condition, if not addressed, could adversely affect the structural integrity of the engine strut and may lead to the separation of the strut to wing box assembly.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.



**(g) Required Actions**

Except as specified by paragraph (h) of this AD: At the applicable times specified in the “Compliance” paragraph of Boeing Alert Requirements Bulletin 747-57A2363 RB, dated December 23, 2019, do all applicable actions identified in, and in accordance with, the Accomplishment Instructions of Boeing Alert Requirements Bulletin 747-57A2363 RB, dated December 23, 2019.

Note 1 to paragraph (g): Guidance for accomplishing the actions required by this AD can be found in Boeing Alert Service Bulletin 747-57A2363, dated December 23, 2019, which is referred to in Boeing Alert Requirements Bulletin 747-57A2363 RB, dated December 23, 2019.

**(h) Exceptions to Service Information Specifications**

(1) Where Boeing Alert Requirements Bulletin 747-57A2363 RB, dated December 23, 2019, uses the phrase “the original issue date of Requirements Bulletin 747-57A2363 RB,” this AD requires using “the effective date of this AD.”

(2) Where Boeing Alert Requirements Bulletin 747-57A2363 RB, dated December 23, 2019, specifies contacting Boeing for repair instructions: This AD requires doing the repair before further flight using a method approved in accordance with the procedures specified in paragraph (i) of this AD.

**(i) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, Seattle ACO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the

manager of the certification office, send it to the attention of the person identified in paragraph (j)(1) of this AD. Information may be emailed to: 9-ANM-Seattle-ACO-AMOC-Requests@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(3) An AMOC that provides an acceptable level of safety may be used for any repair, modification, or alteration required by this AD if it is approved by The Boeing Company Organization Designation Authorization (ODA) that has been authorized by the Manager, Seattle ACO Branch, FAA, to make those findings. To be approved, the repair method, modification deviation, or alteration deviation must meet the certification basis of the airplane, and the approval must specifically refer to this AD.

**(j) Related Information**

(1) For more information about this AD, contact Eric Lin, Aerospace Engineer, Airframe Section, FAA, Seattle ACO Branch, 2200 South 216th St., Des Moines, WA 98198; phone and fax: 206-231-3523; email: eric.lin@faa.gov.

(2) For service information identified in this AD, contact Boeing Commercial Airplanes, Attention: Contractual & Data Services (C&DS), 2600 Westminister Blvd., MC 110-SK57, Seal Beach, CA 90740-5600; telephone 562-797-1717; Internet <https://www.myboeingfleet.com>. You may view this referenced service information at the FAA, Airworthiness Products Section, Operational Safety Branch, 2200 South 216th St., Des Moines, WA. For information on the availability of this material at the FAA, call 206-231-3195.

Issued on June 15, 2020.

Lance T. Gant, Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.  
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